

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 June 2002 (27.06.2002)

PCT

(10) International Publication Number  
**WO 02/050119 A3**

(51) International Patent Classification<sup>7</sup>: C12N 5/06,  
C07K 16/28, 14/705

(21) International Application Number: PCT/EP01/15392

(22) International Filing Date:  
21 December 2001 (21.12.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
00128143.5 21 December 2000 (21.12.2000) EP  
01200944.5 13 March 2001 (13.03.2001) EP

(71) Applicant (for all designated States except US): STICHT-  
ING KATHOLIEKE UNIVERSITEIT [NL/NL]; Geer  
Groteplein 9, NL-6525 EZ Nijmegen (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FIGDOR, Carl,  
Gustav [NL/NL]; Westwal 54, NL-5211 DD Den Bosch  
(NL). GEIJTENBEEK, Teunis, Bernard, Herman  
[NL/NL]; Weezenhof 3471, NL-6536 GR Nijmegen  
(NL). VAN KOOYK, Yvette [NL/NL]; Poggenbeekstraat

5, NL-6813 KD Arnhem (NL). TORENSMA, Ruurd  
[NL/NL]; Neushoornstraat 6, NL-6531 RP Nijmegen  
(NL).

(74) Agent: VAN SOMEREN, Petronella, Francisca, Hen-  
drika, Maria; Arnold & Siedsma, Sweelinckplein 1,  
NL-2517 GK The Hague (NL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,  
YU, ZA, ZW.

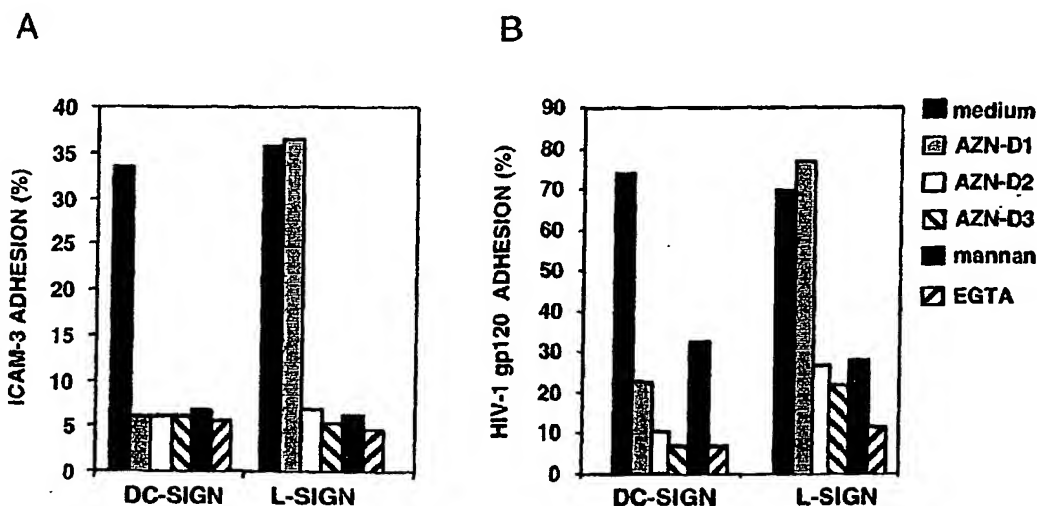
(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: METHOD FOR MODULATING THE BINDING ACTIVITY OF A NOVEL ICAM-3 BINDING RECEPTOR ON SI-  
NUSOIDAL ENDOTHELIAL CELLS IN LIVER AND LYMPH NODES



(57) Abstract: The invention relates to the use of a compound that binds to a C-type lectin on the surface of a sinusoid endothelial layer, in the preparation of a composition for modulating, in particular reducing, the immune response in animal, in particular a human or another mammal. The sinusoid endothelial layer may be either constituted by liver sinusoid endothelial cells (LSEC) or by the lymph node sinusoidal zone.

WO 02/050119 A3

WO 02/050119 A3



(88) Date of publication of the international search report:  
19 September 2002

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/15392

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12N5/06 C07K16/28 C07K14/705

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No.      |
|------------|---|----------------------------|
| X          | EP 1 046 651 A (KONINKL UNIVERSITEIT NIJMEGEN) 25 October 2000 (2000-10-25)   | 1-6,<br>9-15,<br>17-21, 24 |
| Y          | the whole document  | 1-28                       |
| Y          | SOILLEUX ET AL.: "Cutting Edge: DC-SIGN; a related gene, DC-SIGNR; and CD23 form a cluster on 19p13."<br>J. IMMUNOL.,<br>vol. 165, no. 6,<br>15 September 2000 (2000-09-15), pages<br>2937-2942, XP002201117<br>ISSN: 0022-1767<br>cited in the application | 1-28                       |
| X          | the whole document  | 15, 22-28                  |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

\*&\* document member of the same patent family

Date of the actual completion of the international search

12 June 2002

Date of mailing of the international search report

26/06/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Wimmer, G

# INTERNATIONAL SEARCH REPORT

Internal Application No

PCT/EP 01/15392

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| Y          | <p>STAHL P D ET AL: "The mannose receptor is a pattern recognition receptor involved in host defense"</p> <p>CURRENT OPINION IN IMMUNOLOGY, CURRENT BIOLOGY LTD, XX, vol. 10, no. 1, February 1998 (1998-02), pages 50-55, XP004313620</p> <p>ISSN: 0952-7915</p> <p>the whole document</p>   | 1-28                  |
| A          | <p>GEIJTENBEEK TEUNIS B H ET AL:</p> <p>"Identification of DC-SIGN, a novel dendritic cell-specific ICAM-3 receptor that supports primary immune responses"</p> <p>CELL, CELL PRESS, CAMBRIDGE, NA, US, vol. 100, no. 5, 3 March 2000 (2000-03-03), pages 575-585, XP000929197</p> <p>ISSN: 0092-8674</p> <p>cited in the application</p> <p>the whole document</p>   | 1-28                  |
| T          | <p>PÖHLMANN STEFAN ET AL: "DC-SIGNR, a DC-SIGN homologue expressed in endothelial cells, binds to human and simian immunodeficiency viruses and activates infection in trans."</p> <p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES, vol. 98, no. 5, 27 February 2001 (2001-02-27), pages 2670-2675, XP002201118</p> <p>February 27, 2001</p> <p>ISSN: 0027-8424</p> <p>the whole document</p> | 1-28                  |

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 01/15392

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 16  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 16

The term "AZN-D3" does not have a well-defined meaning to the skilled person, and no accession number of the Antibody is given in the application. A reasonable search for subject-matter of the claim was therefore not possible.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International Application No  
**PCT/EP 01/15392**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
| EP 1046651 A                              | 25-10-2000          | EP 1046651 A1              | 25-10-2000          |
|   |                     | AU 4152600 A               | 02-11-2000          |
|   |                     | EP 1086137 A1              | 28-03-2001          |
|   |                     | WO 0063251 A1              | 26-10-2000          |

This Page Blank (uspto)